Having thus described the invention, what is claimed as new and secured by Letters Patent is:

1. A method of decoupling a time-multiplexed data stream of overhead bytes from a time-multiplexed stream of data, said time-multiplexed stream of data consisting of overhead bytes and data bytes for a given path, said method comprising:

a) determining a minimum interface rate based on a minimum overhead spacing between any two consecutive overhead bytes in said given data path and on a data rate of said stream of data; and

b) interfacing between said time-multiplexed data streams of overhead bytes and said stream of data based on said minimum interface rate such that an operation is performed at a frequency that is at least equal to said minimum interface rate.

2. The method as claimed in claim 1, wherein said operation in said interfacing step further includes:

b1) transmitting to an external device said overhead bytes in a next available timeslot within a selected timeslot sequence; and

b2) signalling to said external device transmission in step b1) of said overhead bytes in said next available timeslot.

3. The method as claimed in claim 1, wherein said operation in said interfacing step further includes:

b1) requesting said overhead byte from an external device in a next available timeslot within a selected timeslot sequence; and

b2) if issued from said external device, receiving said overhead byte along said stream of data and receiving an indication of validity of said overhead byte received for insertion from said external device.

4. The method as claimed in claim 2, wherein if said operation is selectively determined to be extraction, said operation includes:

b1) transmitting to an external device said overhead bytes in a next available timeslot within a selected timeslot sequence; and

b2) signalling to said external device transmission in step b1) of said overhead bytes in said next available timeslot;

and wherein if said operation is selectively determined to be insertion, said operation includes:

b1) requesting said overhead byte from said external device in a next available timeslot within a selected timeslot sequence; and

b2) if issued from said external device, receiving said overhead byte along said data stream of data and receiving an indication of validity of said overhead byte received for insertion from said external device.

5. The method as claimed in claim 1, wherein said frequency of operation is synchronized for a single clock domain.

6. The method as claimed in claim 1, further including a step of delaying said operation in step b) for a number of clock cycles to accommodate for any external latency through use of pipelining stages.

7. A data network interface device for decoupling time-multiplexed a data stream of overhead bytes from a time-multiplexed stream of data, said time-multiplexed stream of data consisting of overhead bytes and data bytes for a given path, said interface device comprising:

an overhead processing unit for processing said overhead data bytes and for determining a minimum interface rate based on a minimum overhead spacing between any two consecutive overhead bytes in said given data path and on a data rate of said stream of data, said processing unit having:

an extraction interface for transmitting to an external device said overhead bytes in a next available timeslot within a selected timeslot

sequence, and signalling to said external device transmission of said overhead bytes in said next available timeslot; and

an insertion interface for requesting said overhead byte from an external device in a next available timeslot within a selected timeslot sequence, and for receiving said overhead byte along said stream of data, and for receiving an indication of validity of said overhead byte received from said external device;

wherein said interface device maintains a frequency of operation for said extraction interface and said insertion interface that is at least equal to said minimum interface rate.

8. The network user interface as claimed in claim 7, further comprising a storage device for buffering bursts of data streams arriving at either said insertion interface or said extraction interface.

9. The network user interface as claimed in claim 7, wherein said overhead byte is a path overhead (POH) byte.

10. The network user interface as claimed in claim 7, wherein said overhead byte is a transport overhead (TOH) byte in a Synchronous Optical Network (SONET) system.

11. The network user interface as claimed in claim 7, wherein said overhead byte is a section overhead (SOH) byte in a Synchronous Digital Hierarchy (SDH) system.

12. The network user interface as claimed in claim 7, wherein said data network interface device provides pipelining stages that models any external device latency by an equivalent number of clock cycles to align receipt of said overhead byte with said indication of validity transmitted from said external device to said insertion interface.

13. The network user interface as claimed in claim 7, wherein said data network interface device provides a minimum amount of storage to absorb a data burst of said stream of data in either extraction mode or insertion mode.

14. The network user interface as claimed in claim 7, wherein said data network interface device includes a programmable calendar for dividing and assigning a portion of a total data rate of said data network interface device to a specific stream of data.

15. The network user interface as claimed in claim 7, wherein said network interface device is a plurality of interface devices for decoupling multiple channels, and wherein each parallel clock of said plurality of interface devices is synchronized for a single clock domain.

16. The network user interface as claimed in claim 7, wherein said network interface device is a plurality of interface devices for decoupling multiple channels, and wherein each parallel clock of said plurality of interface devices is provided with different clock domains such that each of said plurality of interface devices maintains a minimum frequency of operation that provides sufficient headroom to accommodate for signal clock variations and cross-clock domain signalling latency.

17. A machine-readable medium having stored thereon machine executable instructions that when executed implement a method of decoupling a time-multiplexed data stream of overhead bytes from a time-multiplexed stream of data, said time-multiplexed stream of data consisting of overhead bytes and data bytes for a given path, said method comprising:

a) determining a minimum interface rate based on a minimum overhead spacing between any two consecutive overhead bytes in said given data path and on a data rate of said stream of data; and

b) interfacing between said time-multiplexed data streams of overhead bytes and said stream of data based on said minimum interface rate such that an operation is performed at a frequency that is at least equal to said minimum interface rate.

18. The machine-readable medium as claimed in claim 17, wherein said operation in said interfacing step further includes:

b1) transmitting to an external device said overhead bytes in a next available timeslot within a selected timeslot sequence; and

b2) signalling to said external device transmission in step b1) of said overhead bytes in said next available timeslot.

19. The machine-readable medium as claimed in claim 17, wherein said operation in said interfacing step further includes:

b1) requesting said overhead byte from an external device in a next available timeslot within a selected timeslot sequence; and

b2) if issued from said external device, receiving said overhead byte along said stream of data and receiving an indication of validity of said overhead byte received for insertion from said external device.

20. The machine-readable medium as claimed in claim 17, wherein if said operation is selectively determined to be extraction, said operation includes:

b1) transmitting to an external device said overhead bytes in a next available timeslot within a selected timeslot sequence; and

b2) signalling to said external device transmission in step b1) of said overhead bytes in said next available timeslot;

and wherein if said operation is selectively determined to be insertion, said operation includes:

b1) requesting said overhead byte from said external device in a next available timeslot within a selected timeslot sequence; and

b2) if issued from said external device, receiving said overhead byte along said data stream of data and receiving an indication of validity of said overhead byte received for insertion from said external device.

21. The machine-readable medium as claimed in claim 17, wherein said frequency of operation is synchronized for a single clock domain.

22. The machine readable medium as claimed in claim 17, further including a step of delaying said operation in step b) a number of clock cycles to accommodate for any external latency through use of pipelining stages.